

IN THE CLAIMS

1. – 4. (canceled)

5. (currently amended) A multicarrier transmission method for multiplying transmit data individually by each code constituting orthogonal codes and transmitting each result of multiplication by a prescribed subcarrier, comprising the steps of:

assigning the same subcarriers selected from among multicarriers to a plurality of users and assigning plural different orthogonal codes to each user;

applying identical transmit beam-forming processing to the transmit data of said plurality of users, which belong to a same directional zone and to which the same subcarriers have been assigned; and

transmitting the transmit beam-formed data of each user obtained by the beam-forming processing by performing code multiplexing using said plural different orthogonal codes on the same subcarriers.

6. – 10. (canceled)

11. (original) A transmitting apparatus of a base station in a multicarrier CDMA transmission system for multiplying user data individually by each code constituting orthogonal codes and transmitting each result of multiplication by a prescribed subcarrier, comprising:

an array antenna comprising a plurality of antenna elements;

a beaming forming unit for applying beam-forming processing to transmit data of a user and generating transmit data for each antenna element;

a multiplier, which is provided for every antenna element, for multiplying one symbol of transmit data, to which the beam-forming processing has been applied, individually by each code constituting orthogonal codes that have been assigned to a user; and

a transmitting unit, which is provided for every antenna element, for performing multicarrier transmission of results of multiplication by a plurality of subcarriers that have been assigned on a per-user basis.

12. (original) A transmitting apparatus of a base station in a multicarrier CDMA transmission system for multiplying user data individually by each code constituting orthogonal codes, outputting results of multiplication and transmitting each result of multiplication by a prescribed subcarrier, comprising:

an array antenna comprising a plurality of antenna elements;

a beaming forming unit for applying beam-forming processing to transmit data of a user and generating transmit data for each antenna element;

a serial/parallel converter, which is provided for every antenna element, for converting transmit data, to which the beam-forming processing has been applied, to parallel data;

a multiplier, which is provided for every antenna element, for multiplying one symbol of parallel data, which has been obtained by the serial-to-parallel conversion, separately by each code constituting orthogonal codes that have been assigned to a user and similarly multiplying each symbol of the parallel data individually by each code constituting other orthogonal codes that have been assigned to said user;

a combiner, which is provided for every antenna element, for combining results of multiplication by corresponding codes of each of the orthogonal codes; and

a transmitting unit, which is provided for every antenna element, for performing multicarrier transmission of each of the combined results by a plurality of subcarriers that have been assigned on a per-user basis.

13. (original) A transmitting apparatus of a base station according to claim 11, wherein a plurality of identical carriers are assigned to a plurality of users, different orthogonal codes are assigned to each user, code multiplexing is performed on the same carriers on a per-antenna basis and transmit data of each user is transmitted.

14. (canceled)